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EMPIRE COTTON GROWING CORPORATION.

REPORT OF THE EIGHTH ANNUAL GENERAL MEETING.

The Eighth Annual General Meeting of the Corporation was held at the Corporation's Offices, Millbank House, Westminster, on Monday, 3rd June, 1929. In the unavoidable absence of the President of the Board of Trade, the Chair was taken by the Rt. Hon. The Earl of Derby, K.G.

LORD DERBY, in presenting the Report of the Council, said:

Gentlemen, I should like to repeat, now that the Press are present, something that was done at the meeting of the Administrative Council just concluded; that is, that we all express to Sir James Currie our great sympathy with him in the accident which has befallen him and our earnest hope that he may very soon be restored to complete health and to the performance of the work which he does so well on our behalf.

Gentlemen, I am delighted to be able to be here and to move the adoption of the Report. I have read it with the greatest interest and pleasure and consider it to be a record of solid work, and, on the whole, steady progress. From the very outset your Executive have warned you that nothing could be looked for in the way of fireworks or of spectacular progress. Anybody who has even an elementary acquaintance with farming realises that nature cannot be hurried. She will invariably respond to well directed work, based on industry and knowledge, but hurry she will not. This is precisely what is happening with the Corporation's work.

Up till now the chief preoccupation of your Executive has been spade work and the digging of foundations. Though that is not yet completed, I believe that the ratio of actual increase will be greater during the coming five years than it has been in the past, gratifying though that has been.

The course of politics will lead to changes in the political direction of the Colonial Office. Let me put on record the debt we owe to its late chiefs, Mr. Amery and Mr. Ormsby Gore. Their period of administration will be memorable in the history of the agricultural development of the Crown Colonies. The steady support given to the Imperial College of Tropical Agriculture in Trinidad will in another ten years transform the whole level of efficiency in the agricultural and scientific services abroad. The adoption of the Lovat Committee's Report and of the recommendations of the Imperial Agricultural Research Conference of 1927 mark a new epoch so far as facilities for research are concerned.

An Agricultural Advisory Council has been installed at the Colonial Office and, what is of equal importance, an Assistant Agricultural Adviser, in the person of Mr. Stockdale, late Director of Agriculture in Ceylon, has been added to the Colonial Office Staff. We are fortunate in having him here with us to-day and look forward to the address he is shortly going to give us.

Of the Research Bureaux which the Lovat Report contemplated setting up, eight will have been opened before the end of this summer. All of them touch on our work, more or less directly. I might mention two of special interest to us, the Bureau of Plant Genetics at Cambridge, and the Bureau of Soil Science at Rothamsted. We welcome the appointment of Dr. Joseph, whose work in connection with Gezira soils is so well known, as Deputy Director, under Sir John Russell, of the latter Bureau.

It is not for me to attempt to form an estimate of the contribution that our Corporation has made to the formation

of that public opinion without which even the ablest political chiefs find effective action well nigh impossible. I content myself with putting on record my opinion, which I believe those responsible would be the first to corroborate, that we have rendered effective and material help. While thinking that the beneficial effect of all these efforts cannot be exaggerated, may I, speaking from my personal point of view, express the hope that there will be no effort to force the pace unduly. The staff to man much of what is clearly necessary does not exist to-day and the harvest of the College in Trinidad must be awaited.

Before leaving this topic, I would like to bear testimony to the invaluable aid that the Empire Marketing Board has rendered alike to training and research. Without its aid much essential development could not have taken place.

To leave the Colonial Office and to turn to the Nile and the Sudan, with which the Foreign Office are concerned, I would call your attention to the immense importance of the agreement arrived at between the Egyptian, British and Sudanese Governments on the matter of the utilisation of the waters of the Nile. This will ultimately render possible an immense extension of the cultivable area of Egypt, and I now hope for a solution or mitigation of that agrarian and over-population problem that has so long confronted her, the facing of which has been regrettably delayed. Mahmud Pasha, the Egyptian Prime Minister, and Lord Lloyd are indeed to be congratulated. Further developments in the Gezira will no doubt follow in due course.

On the political side the differences between Egypt and the Sudan are yet unsettled. On these differences I express no opinion other than to voice the belief that the economic ties that bind the two countries together are greater than the racial and political differences that keep them apart, and that, in spite of tragic happenings, we shall yet see agreement in the political as well as the economic sphere.

Before I leave this subject, I know every man in this room will join with me in congratulating Sir Friedrich Eckstein on the Baronetcy conferred on him. ("Hear, hear.") Without him, without his faith and courage, these vast Sudan development schemes would have perished still-born. The debt that Lancashire owes him is immense, the debt owed him by the population of the Gezira, now free from grinding poverty and perpetual famine, is even greater. And the vast scheme of profit-sharing and co-operation that he has established is serving as an object lesson that will contribute towards the solution of many other complicated African problems. While we congratulate Sir Friedrich, I would recall our debt to others no longer with us, notably to Lord Kitchener, Sir Julius Wernher, Sir William Mather, and to that great American pioneer of Sudan cotton-growing, happily still alive and vigorous, Mr. Leigh Hunt.

I will conclude with a brief reference to some of the principal fields in which we are particularly interested. To begin with the Sudan, the very strong London Advisory Committee, of which our Director is Chairman, on which all Sudan interests are represented, and to which a strong advisory scientific element is co-opted, continues to act in an advisory capacity to the Sudan Government. It is hoped that one of its members, Mr. Engledow, of the Cambridge University School of Agriculture, may find it possible to visit the Gezira next winter. The Plant Breeding Station, to which, so far as personnel goes, we make a substantial contribution, continues its important work. Various soil problems continue to engage attention, both locally and at Rothamsted. All such work we regard as of vital importance, as, magnificent though the Gezira results have been up to the present, no one can say that the various agricultural problems are not numerous, complex and still partially unsolved.

Work in the rainfall areas continues vigorously. The completion of the Kassala Railway from Gedaref to Sennar

has brought a new area within the possibilities of economic development, full of promise, if drinking water, of which there is a great scarcity, can be provided for the cultivators. There is no doubt that the Sudan will at no very distant date be a large producer of rainfall cotton. Its Government, with their tradition of good administration, can safely be trusted to handle the various problems as they arise.

Events in Uganda have pursued a normal course. Mr. Simpson, the Director of Agriculture, who may justly be termed the father of the industry, has retired after many years of distinguished service. The quality of the cotton produced, which comes back to the problem of seed supply, is engaging the attention of those responsible. Of the necessity of this there can be no doubt, as the quality and quantity of Upper Egyptian cotton is certainly a challenge to the Uganda crop. Plant breeding in Uganda is, however, in capable hands and it is hoped that the contact that is being established between the Uganda and Sudan plant breeders, Mr. Nye and Mr. Bailey, may be productive of good results. The difficulty of redundant ginneries remains, and the Governor has appointed a commission to deal with the whole question. We all wish Dr. Tothill, the new Director of Agriculture, success in his great and far from easy administrative task.

The steady progress in Tanganyika or in Nyasaland does not appear to call this year for lengthy comment. The output from the former in 1928 was the largest yet recorded, while, largely owing to the efforts of the British Cotton Growing Association on the commercial side and our own plant breeding work, the future of cotton-growing in Nyasaland, at all events as a rotation crop, appears distinctly hopeful.

In Nigeria, which is fortunate in having a large and active Department of Agriculture, the work of the Corporation is chiefly confined to the multiplication of selected seed. The seed farm grows apace and the recent visit from Colonel French and Mr. Engledow was generally welcomed.

The situation in the Union of South Africa is particularly interesting. There can be no doubt that the brilliant plant breeding work at Barberton is bearing fruit. Several jassid-resistant types of excellent quality have been evolved and after this season will for the first time be available in commercial quantities. All reports alike, from Natal, from Zululand, from Swaziland, and the Transvaal, strike a distinctly optimistic note and it is impossible not to await the issue with considerably increased confidence.

Much the same criticism is applicable to Southern Rhodesia. I say what I am going to say now with the greatest diffidence in the presence of Sir Francis Newton. The work at our plant breeding station at Gatooma continues to prosper, and there can be no doubt whatever that if the present promise of certain types is fulfilled we shall see a striking increase of cotton-growing in Southern Rhodesia in the very near future.

Things in Northern Rhodesia are in a more rudimentary stage and it remains to be seen what the capable staff at the Mazabuka agricultural and veterinary research station will be able to accomplish. The enormous mineral developments that are taking place in this country will make the problem of native food supply a very urgent one. It looks as if the rapid development of maize cultivation (and maize is the staple native food) were largely bound up with the provision of an alternative crop, and cotton, if it can be established, is beyond doubt the ideal rotation, providing as it does a crop of very definite exportable value.

I think I have now touched on the most important spheres of activity of our Corporation. Pioneer work of promise is going on in Iraq, in Ceylon, in Fiji, on the Gold Coast, and all such efforts our Corporation does its best to assist and foster.

Our Director and Mr. Engledow have recently visited our fundamental research station in Trinidad, where work of

primary importance, both in the field of genetics and of plant physiology, is being undertaken. Their Report has been delayed by a chapter of accidents, but it will soon be forthcoming.

As regards transport, our Corporation, after setting machinery in motion, has felt that its objective was accomplished. After very full consideration of the whole subject by a Sub-Committee of the Committee of Civil Research, the matter has been placed in the hands of an Oversea Mechanical Transport Committee, of which Sir James Currie is Chairman and Mr. J. C. May Secretary. The cost of the work, which will be considerable, will be borne in part by the Empire Marketing Board and in part by the Oversea Governments concerned. Should their efforts, which must necessarily extend over a considerable period, be attended by success, a great stimulus will be given both to cotton-growing and to all other forms of development in the Tropics. If I may say so, my own personal opinion is that transport and the solution of our transport difficulties will help more than anything else to get bigger cotton production in almost all our Colonies. In any case our Corporation may justly claim that its policy of aiding this movement in its early stages has been more than justified.

Gentlemen, I am afraid my review of the situation has taken longer than I usually take on these occasions; I hope you will pardon that and that what I have said may prove to be of some interest not only to you here but to the general public outside.

Having said that, I would ask leave formally now to move the adoption of the Report.

MR. JACKSON: I second that resolution.

THE CHAIRMAN: You have heard it formally moved and seconded, and the whole question is now open for discussion and questions. If there is nothing anybody wishes to say and

no question you wish to ask, I will formally put it to this meeting that the Report be adopted. Those in favour kindly show it in the usual way, and to the contrary. That is carried.

The next business is to appoint the auditors and fix their remuneration.

MR. FOSTER: Mr. Chairman, I formally move the re-appointment of the auditors for the ensuing twelve months at a remuneration to be fixed by the Executive Committee.

MR. F. WRIGHT: I second that.

THE CHAIRMAN: Gentlemen, you have heard the resolution formally moved and seconded. Those in favour kindly indicate in the usual way. To the contrary? That is carried. That concludes the actual business of our meeting, but I am glad to say Mr. Stockdale, Assistant Agricultural Adviser to the Colonial Office, has kindly consented to give us a short address on some problems of agricultural development in the Tropics. I am sure we shall greatly appreciate what he is good enough to tell us.

MR. STOCKDALE: Lord Derby and Gentlemen, I count this a great privilege to be able to address a few remarks to you about some of the problems of tropical development, and I have to thank Sir James Currie for the opportunity that he has given me to make these few comments.

Within recent years there has been a marked development of agricultural activities within the Colonial Empire not only in the capitalistic plantation industries, but also in the industries of the indigenous populations of all countries. This development has given rise to administrative problems and has also necessitated considerable extensions of the technical agricultural services. It is to the agricultural aspect that I shall confine my remarks to-day.

For convenience, it is desirable to divide the agricultural enterprises in the tropics into the two clear divisions (1) those

relating to crops of a permanent character, and (2), those relating to annual crops grown in a systematic rotation.

A general survey will direct our attention to the development of the sugar-cane enterprises of the West Indies, of coffee in Ceylon and in more recent times of bananas in the West Indies and Central America, tea and rubber in the East, cacao in West Africa, coffee and sisal in East Africa, and of cotton in the numerous territories mentioned in the Report of the Empire Cotton Growing Corporation which has been presented to-day. Tropical agriculture is prosperous in many directions but it has seen the disasters which have befallen the coffee industry of Ceylon, the sugar industry of the West Indies, and more recently the difficulties of several banana-growing countries. The lessons to be learned from these disasters and difficulties clearly indicate, to my mind, the necessity for laying stress upon the purely agricultural aspects of our tropical industries.

There have been periods of high yields, not infrequently the result of the exploitation of the high fertility of virgin lands, and these periods have been followed by diminishing returns and ultimately by attacks of diseases and resultant collapse.

In the hilly lands within the tropics one sees vast stretches of land which have lost their initial fertility. Many soils have been leached and washed away under the heavy rainfalls frequently experienced. The soil erosion which has taken place on the hilly slopes of the tropics has been most serious. Unless this is adequately recognised and steps taken to prevent it proceeding further, there can be no doubt that the era of diminishing returns is before many parts of the tropics, and succeeding civilisations will condemn our age, in hilly areas, as one of devastation, and will feel that we have shown no more enlightenment in our agricultural efforts than the old civilisations of Central and South America. Tropical soils in general are not of high fertility, and rapidly become depleted

of humus and organic matter under the climatic conditions which prevail there. In many parts determined efforts are being made to build up again soil fertility, but more remains to be done. The maintenance of humus and organic matter must be the basis of all sound agriculture within the tropics, and steps should be taken to conserve the top soils and prevent the capital assets of the agriculturist being washed to the valleys and the rivers below.

Who is prepared to say that the disaster to coffee in Ceylon did not result from faulty methods of culture for the conditions there prevailing, and who will maintain that the present troubles of banana cultivation cannot be assigned to a similar cause?

More and more those scientists working in the tropics on plant diseases and insect pests are realising that control measures are bound up with sound agriculture, and more and more are all who are concerned with crop-production realising that maximum crops are made in the fields and not in the factories. We have seen the failures of the past, and we have the troubles of to-day. Are not the hopes of the future to be found in the employment of a band of research workers who will be charged with the duty of studying the various changes that are taking place in soils and plants and of presenting their ascertained facts before the practical growers responsible for the cultivations? This band of research workers must not be limited in numbers, nor the scope of their work confined to every-day problems. The workers must be possessed of a true agricultural sense and must be capable of taking the long view and of visualizing the ultimate results of existing agricultural methods and of suggesting where changes are necessary, if increased longevity of the several agricultural enterprises is to be assured. It is not sufficient to look only at the problems of the immediate present, and the research work required should be looked upon by the present generation of owners as an insurance for the future, and by the governments concerned as their duty to future generations.

Such work can only be undertaken by well-equipped research institutions working on long-range problems, but it is essential that these should be linked up in the closest possible touch with the field and research workers charged with the investigation of the present day problems. One class of work without the other cannot lead very far, and satisfactory results cannot be secured if they are conducted independently of each other. At the moment, field and research investigators for present day problems have been attached to the Agricultural Departments, but the provision for long-range research has not yet been made except by the beginnings at Amani, and at Trinidad for cotton and bananas. It is this provision for long-range research which is now receiving consideration, and the action of your Corporation in organizing such research for cotton at Trinidad is to be commended.

It is obvious, however, that such provision for long-range research will be premature unless co-ordination with existing investigators is arranged and liaison officers provided for maintaining that essential personal contact with the work already in progress. The appointment of such a liaison officer for cotton research and investigation is one which I would commend to your attention. Exchange of literature is useful in its way, but personal contact is of greater value and the discussion of one worker's problems with another all important. Conferences have been arranged to provide for this personal contact and discussion, but it has to be considered whether the provision of a travelling liaison officer will not assist in fostering the personal contact between scattered workers on cotton problems.

Amongst permanent crops within the tropics further work on the selection of high-yielding strains is necessary. Work has already begun in this direction with cacao at Trinidad and the Gold Coast, with rubber in Ceylon and Malaya, and with coconuts in Malaya, Ceylon and Fiji. The spread of high-yielding types may have, in the case of cacao, coffee and

rubber, to depend upon vegetative propagation, and a careful long-range study of the relationships between stocks and scions should be organized for these industries if mistakes and disappointments are to be avoided. The selection of high-yielding strains of coffee is progressing in Java, and it is probable that a similar line of work should be organized for East Africa.

Amongst annual crops, of which cotton is the one of the greatest interest to those present to-day, the outstanding problem is the supply of unadulterated seed of good high-yielding types. It is comparatively easy for the plant breeder to raise pure strains at Experiment Stations, but it is important that these types should be suited for the particular agricultural and economic conditions of the growers for whom they are intended and for the industrial requirements of the buyers. It is equally necessary that the purity of the seed should be maintained in its transit from the plant-breeding stations through the multiplication farms to the grower. The multiplication farms should be registered and precautions taken, by means of organized inspection and by other means, to prevent the contamination of the seed of their produce with inferior types. The provision for a steady stream of pure seed is essential for the welfare of any cotton industry.

Of equal importance is the close investigation of the agricultural requirements of the crop and its rotations. The success of any money crop must be judged by its financial return per acre to the growers, and, therefore, it is essential that efforts should be made, by the improvement of agricultural methods, to procure better crops. The additional costs involved by these improvements should be considered against the value of the increased crops raised. In fact, the financial side of all agricultural operations requires to be kept always in view, for no improvement, however desirable, can be recommended until it has been ascertained, without doubt,

that it will pay. The raising of increased crops of higher quality is of no value to the producer unless it results in a better financial return.

It must also not be forgotten that the producers in the tropics are in the main but small units, with poor opportunities of acquiring knowledge of organizations for sales of produce. Such producers cannot be left to the free play of economic forces. They must be assisted in the organization of their markets. The continuity of supplies is of vital importance to the manufacturing interests and these are more likely to be assured if attention is given to assisting the producers towards securing the best forms of organization needed for meeting their marketing problems. I am aware that much has been done by Agricultural Departments of various Colonies to assist in a solution of marketing problems, but it might be worth the consideration of the Empire Cotton Growing Corporation whether a survey by a competent officer, or officers, over the whole range of cotton-growing countries within the Empire, of the systems of marketing would not lead to advancement of permanent value both to the producer and to the buyer. In some countries a system of public auctions has been arranged and in others regulated markets have been established. Would it not be worth while to have the whole position thoroughly reviewed and the results of one system compared with the results of another, and the experiences gained in one country interchanged with those of another? If such an investigation were undertaken, I would plead that the growers' needs should be kept always to the forefront. Too often arrangements for marketing are made to suit the convenience of the buyers, and the requirements of the producers are often not sufficiently studied.

Cotton, however, can only be a rotation crop in a regular system of agriculture. Maintenance of soil fertility is essential. Rotations have to be worked out, and the ever important question of adequate food supplies for both growers

and their cattle kept in view. The nutrition of many of the inhabitants of the tropics is inadequate, and recent research is showing the important bearing that nutrition has on health. More food and better food is required in many areas, and it is the importance of the food crops grown in rotation with cotton and other money crops that must be kept to the forefront by those responsible for agricultural development. Such a cultivation of crops in rotation means, in certain cases, a break away from shifting cultivation and one of the most difficult of all tropical problems is how to effect this change from a transitionary and wasteful cultivation to a more permanent and regular system of agriculture. Land tenures have to be studied and some adjustments may be necessary. Capital in the form of implements and draught cattle has to be earned by the cultivators and a more regular system of life and industry started. Such changes take time to secure, require infinite patience and most earnest and deep thought. The replacement of shifting cultivation is one of the problems of the tropics most difficult to solve. It has been solved in past civilizations only as the result of economic pressure. Cannot we hope that a solution will be found and that the change over will not be left in our age to the time when economic pressure makes the change necessary?

This brings me to the question of cattle and animal husbandry in general. The disease question is being slowly but surely tackled, but the raising of good supplies of stock for agricultural requirements still remains to be considered. A vast amount of work awaits the attention of livestock officers. But this work must not be rushed and it must be carefully planned. Cattle are required in any permanent system of agriculture, both for draught purposes and for manure. India possesses a number of breeds of draught animals of world-wide reputation and there is no reason why, by careful selection, the various portions of the Colonial Empire should not in time produce herds of equal merit. It

appears to me that selection should form the basis of animal improvement in the tropics, and such work must be continuous if satisfactory results are to be secured. The raising of pedigree herds of animals suited to the conditions of the country and capable of living on the food supply available is a matter which demands attention. It is work which has not yet been taken in hand except in a small way, but it is work which is important and essential.

In conclusion, I would close these brief remarks with an appreciation of the efforts of the Empire Cotton Growing Corporation in its initiation of research work and in the assistance given towards providing the needed supplies of pure seed in cotton-growing countries. I would, however, direct its attention to the need for study of marketing problems and to the livestock improvements required for cotton growers. To guide the plough of human endeavour is the privilege of all who serve the Crown in the tropical dependencies, to plan out and direct its furrows is the duty of the agricultural officers. The Cotton Corporation through its officers has, in the past, rendered valuable assistance in co-operation with the Agricultural Departments, but there are numerous lines of activity which may be worthy of its consideration for the future. I have commended to your attention a few, and I am confident that at the hands of your members they will receive most careful attention. Cotton has proved to be a most valuable money crop for considerable areas of the tropics. Its cultivation is now firmly established in many parts of the Empire and it remains to consolidate the position and to work for those improvements which are necessary for the continuance of regular supplies of high quality and for the well-being of those millions responsible for production.

THE CHAIRMAN: Is there anything anybody would like to ask Mr. Stockdale?

Sir Edmund Bartley Denniss: I should like to ask one question. Is there still room for research, and especially is there room for what you described as liaison officers to maintain communication between various permanent research institutions and the actual growers?

Mr. Stockdale: Yes, further arrangements may be necessary in that respect.

The Chairman: Gentlemen, I think I am voicing the wishes of all of you when I thank Mr. Stockdale most sincerely for the very interesting address that he has made to us. If I may make just one comment on it, I can do it in one sentence. Speaking of this Corporation, he used these words: "I would, however, direct its attention to the need for a study of marketing problems and to the livestock improvements required for cotton growers." I am not quite sure that your Executive would not feel the second part of that to be outside their province. I am equally sure that they would desire to carry out to the fullest extent the first part of that proposal. If I may say so, it is a very big problem, bigger than perhaps appears on the face of it, because it is on the fringe, if it does not actually go over the border line, of giving a stabilised price and a fixed price, which is the most dangerous thing I think for anybody to undertake. But I think Mr. Stockdale can rest assured that, having heard the address which he has been good enough to make here to-day, we shall take to heart all the hints he has given us, and, as a Corporation, will do everything we possibly can to carry out those views which he has asked us to consider. I thank him again for his address, and can assure him of our most active and hearty co-operation.

Gentlemen, that concludes our business.